



Anand Nagar, Krishnankoil - 626126, Srivilliputtur (via), Virudhunagar District, Tamilnadu.

APPLICATION FOR ADMISSION TO Ph.D. PROGRAMMES

Date of Application:18-05-2021

Department	BIOTECHNOLOGY	Application No.	202110008
Area of Research	TISSUE ENGINEERING	Research Mode	FULL TIME

Name :KARTHICK A

Date of Birth / Age :09-12-1996 / 24 Years

Gender :MALE

Category :BC

e-Mail ID :danielkarthick1@gmail.com

Mobile :8883161961



A. Karthick

Father's/Husband's Name	ARUMUGAM	Father's/Husband's Occupation	BUSSINESS
Family Income	0	Residential Type	URBAN
Birth Place	MADURAI	Mother Tongue	TAMIL
Religion	HINDU	Martial Status	SINGLE
Aadhaar No.	873111793121	PAN No.	CTOPA1180L
Physically Challenged	NO	Type of Disability	-
Address for Communication: NO.5 JB NAGAR, GANDHIJI STREET EXT., PONMENI MADURAI MADURAI DISTRICT TAMIL NADU INDIA Pin-625016		Permenant Address: NO.5 JB NAGAR, GANDHIJI STREET EXT., PONMENI MADURAI MADURAI DISTRICT TAMIL NADU INDIA Pin-625016	

Qualification						
Degree	Discipline	College/university	Year Passed	AVG/CGPA	Class	Mode
B.TECH	BIOTECHNOLOGY	KALASALINGAM UNIVERSITY	2018	6.98	FIRST	REGULAR
M.TECH	BIOTECH	KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY	2020	8.15	FIRST	REGULAR

Experience				
Organization	Designation	Experience From	Experience TO	Work Nature

Payment Details				
Transaction ID	Reference	Date of transaction	Amount	Status
202110008_210518133529	VHD49978966506	18-05-2021	600	SUCCESS

Evaluation of cytotoxic effect of Fucoxanthin and Phlorotannin on apoptosis

Abstract:

We aimed to investigate the effect of Fucoxanthin and Phlorotannin present in *Sargassum tenerrimum* on apoptosis mechanism by *in-vitro* analysis. We have to characterize the extracting compound Fucoxanthin and Phlorotannin by phytochemical analysis, UV-Visible spectrophotometer and FTIR respectively. Further docking by PYRX tool to evaluate the apoptogenic potential through stimulation of caspases-3, 8, 6, 9 and Bax, where Bax protein gets interaction at active site amino acid residue gives better binding affinity, which blocks the Bcl-2 for the upregulation of Bax protein to induce apoptosis. Further *in-vitro* analysis shows the cytotoxicity of fucoxanthin and phlorotannin crude extract in MCF 7 breast cancer cell line.

Introduction:

Sargassum tenerrimum species are tropical and sub-tropical brown macroalgae of shallow marine meadow. The derived bioactive compound Fucoxanthin and Phlorotannin have many biological activities such as anti-cancer, anti-coagulant, anti-oxidant and other activities. Breast cancer is the second leading cause of death in women worldwide, with nearly 1.7 million new cases in that 80% of breast cancer occur in women older than age 50. There are two major apoptosis signaling pathway, one is death receptor (extrinsic) pathway and the mitochondria (intrinsic) mediated pathway. Caspase 8,9 are initiators and Caspase 3, 7, 6 was executioners of apoptosis. The anti-apoptotic protein Bcl-2 blocks the mitochondrial outer membrane and inhibits apoptosis and the expression of pro-apoptotic Bax protein inhibit the Bcl-2 proteins might induce the apoptosis in cancer cells. We further demonstrated the apoptosis by *in-silico* analysis via extrinsic and intrinsic apoptotic signaling pathway through anti-apoptotic and pro-apoptotic proteins.

Materials and methods:

The Fucoxanthin and Phlorotannin were extracted by Solvent extraction method (chloroform: methanol: water in the ratio 4:2:1), after 3 days separate the phases and store at 4 °C. The phytochemical screening of extracts for the presence of phenol, tannins, saponins were carried out. The pigment profile of the fucoxanthin was determined by using a double beam UV-Visible spectrophotometer at the wavelength range of 350-750 nm. The FTIR analysis was carried to evaluate the presence of fucoxanthin and phlorotannin through the functional groups respectively and then total phenolic content of phlorotannin crude extract was determined by the Folin-Ciocalteu method. For in-silico analysis, the proteins and ligands were obtained from PDB and PubChem respectively, then processed for the docking by using PYMOL. Then evaluate cytotoxicity by MTT assay with IC₅₀ value and through western blotting the Caspase 3,6,8,9 and bax, bcl-2 proteins were treated with MCF7 cells to evaluate the morphological changes to confirm cytotoxic effects respectively.

Advantages:

Brown algae were abundantly available in Indian Coastal areas and the drug will be of low cost compared with available drugs. Further it may reduce most of the side effects.

ANNA UNIVERSITY

CHENNAI - 600 025



PROVISIONAL CERTIFICATE

Folio No.: **AUO2428207**

This is to certify that the following candidate has qualified for the award of Degree as detailed below:

Name : **KARTHICK A**

Registration Number : **920418509009**

Degree : **M.Tech.**

Branch/Specialization : **Biotechnology**

Month and Year of Passing: **April 2020**

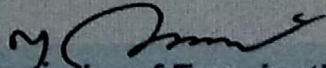
Classification : **FIRST CLASS**



Chennai - 600 025.

Date : **02/11/2020**

K117107091429A


Controller of Examinations i/c

SL.No: 20180164

KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION
(Deemed to be University)
(Under Section 3 of UGC Act 1956)



Register No.

9914001018

The Board of Management of the Kalasalingam Academy Of Research And Education ,
hereby makes known that Ms./Mr. **KARTHICK A**has
been admitted to the Degree of **Bachelor of Technology in Biotechnology**
he / she having been certified by duly appointed examiners to be qualified to receive the same
and having been placed in the **First Class**
at the examination held in **Apr/May 2018**

Given under the seal



Anand Nagar,
Krishnankoil - 626 126,
Tamil Nadu, India

Date: 28/10/2018

M. Rajan
Controller of Examinations

[Signature]
Registrar

[Signature]
Vice - Chancellor



சான்றிதழ் வ.எண் /
Certificate Sl. No. HSG

8761279



அரசுத் தேர்வுகள் துறை, சென்னை - 600006
DEPARTMENT OF GOVERNMENT EXAMINATIONS, CHENNAI - 600006

மேல்நிலைப் பள்ளிக் கல்விச் சான்றிதழ்

HIGHER SECONDARY COURSE CERTIFICATE

பொதுக்கல்வி / GENERAL EDUCATION

தமிழ்நாடு அரசின் அதிகாரத்திற்கு உட்பட்டு வழங்கப்படுகிறது
ISSUED UNDER THE AUTHORITY OF THE GOVERNMENT OF TAMILNADU



MAR. 2014

இல் மேல்நிலைப்

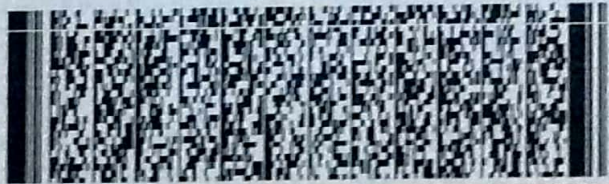
தேர்வர் **KARTHICK A**

பள்ளிக் கல்விப் பொதுத் தேர்வெழுதிக் கீழ்க்காணும் மதிப்பெண்களைப் பெற்றுள்ளார் என்று
சான்றளிக்கப்படுகிறது.

Certified that the above mentioned candidate appeared for the Higher Secondary Public Examination and obtained the following marks :

பாடம் SUBJECT		கருத்தியல் THEORY 150	செய்முறை PRAC. 50	பெற்ற மதிப்பெண்கள் 200க்கு MARKS OBTAINED FOR 200		
TAMIL				181	ONE EIGHT ONE	(P)
ENGLISH				170	ONE SEVEN ZERO	(P)
PHYSICS		089	050	139	ONE THREE NINE	(P)
CHEMISTRY		095	050	145	ONE FOUR FIVE	(P)
BIOLOGY		072	050	122	ONE TWO TWO	(P)
MATHEMATICS				107	ONE ZERO SEVEN	(P)
மொத்த மதிப்பெண்கள் TOTAL MARKS		0864	ZERO EIGHT SIX FOUR			(PASS)
பிறந்த தேதி / DATE OF BIRTH		பதிவேண் / REGISTER NO.		ம.அ.பகுதியிடெண் & நாள் / TMR CODE NO & DATE		
09.12.96		178258		G247822 09.05.2014		
பயிற்று மொழி / MEDIUM OF INSTRUCTION				பாடத்தொகுப்பு எண் / GROUP CODE		
ENGLISH				103		
பள்ளியின் பெயர் / NAME OF THE SCHOOL						
DOLPHIN M HSS MADURAI						

(20 \ 0545)



(Signature)

மாநிலப் பள்ளித் தேர்வுகள் குழுமத்தின் (தமிழ்நாடு) தமிழ்நாடு

SECRETARY

STATE BOARD OF SCHOOL EXAMINATIONS (HR SEC), TAMILNADU

A. Karthick

தேர்வாளர் கையொப்பம்

CANDIDATE'S SIGNATURE



சான்றிதழ் வ.எண் /
Certificate Sl. No. SEC

0324656



அரசுத் தேர்வுகள் துறை, சென்னை - 600 006
DEPARTMENT OF GOVERNMENT EXAMINATIONS, CHENNAI - 600 006

இடைநிலைப் பள்ளி இறுதி வகுப்புச் சான்றிதழ்
SECONDARY SCHOOL LEAVING CERTIFICATE

புதிய பாடத்திட்டம் / NEW SYLLABUS

பத்தாம் வகுப்பு / X STANDARD

தமிழ்நாடு அரசின் அதிகாரத்திற்கு உட்பட்டு வழங்கப்படுகிறது
ISSUED UNDER THE AUTHORITY OF THE GOVERNMENT OF TAMILNADU



தேர்வர் **KARTHICK A**

APR 2012 இல் இடைநிலைப்

பள்ளி இறுதி வகுப்புச் சான்றிதழ் பொதுத் தேர்வெழுதிக் கீழ்க்காணும் மதிப்பெண்களைப் பெற்றுள்ளார் என்று சான்றளிக்கப்படுகிறது.

Certified that the above mentioned candidate appeared for the Secondary School Leaving Certificate Public Examination and obtained the following marks :

பாடம் SUBJECT	பெரும் அளவு மதிப்பெண்கள் MAX. MARKS	பெற்ற மதிப்பெண்கள் MARKS OBTAINED
தமிழ் TAMIL	100	077 ZERO SEVEN SEVEN
ஆங்கிலம் ENGLISH	100	081 ZERO EIGHT ONE
கணிதம் MATHEMATICS	100	074 ZERO SEVEN FOUR
அறிவியல்* SCIENCE*	059	084 ZERO EIGHT FOUR
செய்முறை PRACTICAL	025	
சமூக அறிவியல் SOCIAL SCIENCE	100	095 ZERO NINE FIVE
மொத்தம் TOTAL	500	411 FOUR ONE ONE



பிறந்த தேதி / DATE OF BIRTH 12-09-96	பதிவேண்/REGISTER NO. 1232169	ம.அ.ப.குறியீட்டெண் & நாள் / TMR CODE NO. & DATE G5219913 04.06.2012
09.12.96	பயிற்று மொழி / MEDIUM OF INSTRUCTION ENGLISH	
	பள்ளியின் பெயர் / NAME OF THE SCHOOL DOLPHIN M HSS MADURAI	

இடைநிலைப் பள்ளி இறுதி வகுப்புச் சான்றிதழ் பொதுத் தேர்வில் தேர்ச்சி பெற ஒவ்வொரு பாடத்திலும், 100-க்குக் குறைவான அளவு முப்பத்தைந்து மதிப்பெண்கள் பெறுதல் வேண்டும். அறிவியல் பாடத்தில்* கருத்தியலில் 75-க்கு 20 மதிப்பெண்களும் மற்றும் செய்முறைத் தேர்வில் 25-க்கு 15 மதிப்பெண்களும் பெறுதல் வேண்டும். இது பகுதி முறையில் தேர்வெழுதித் தேர்ச்சி பெறுவதற்கும் பொருந்தும்.

A PASS IN THE SSLC PUBLIC EXAMINATION REQUIRES A MINIMUM OF THIRTY FIVE PERCENT OF MARKS IN EACH SUBJECT. IN SCIENCE SUBJECT* 20 MARKS OUT OF 75 IN THEORY AND 15 MARKS OUT OF 25 IN PRACTICAL IS REQUIRED. THIS INCLUDES PASSING UNDER THE COMPARTMENTAL SYSTEM ALSO.

A. Karthick
CANDIDATE'S SIGNATURE

செயலாளர்
மாநிலப் பள்ளித் தேர்வுகள் குழுவும் (இடைநிலை), தமிழ்நாடு
SECRETARY
STATE BOARD OF SCHOOL EXAMINATIONS(SEC), TAMILNADU



ANNA UNIVERSITY, CHENNAI - 25
M.Tech. DEGREE EXAMINATIONS
CONSOLIDATED STATEMENT OF GRADES

K117107091429A

Folio No. AUO2428207



NAME OF THE CANDIDATE	KARTHICK A			REGISTER NO.	920418509009
DATE OF BIRTH	09-DEC-1996	GENDER	MALE	MONTH & YEAR OF LAST APPEARANCE	APR 2020
COLLEGE OF STUDY	KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY			REGULATIONS	2017
PROGRAMME & SPECIALIZATION	M.Tech. Biotechnology				

SEM NO	COURSE CODE	COURSE TITLE	CREDITS	LETTER GRADE	GRADE POINT	MONTH & YEAR OF PASSING
01	BY5101	Advanced Genetic Engineering	3	B+	7	DEC 2018
01	BY5102	Enzyme Technology and Fermentation Technology	3	B+	7	DEC 2018
01	BY5103	Bioinformatics and Applications	3	B+	7	DEC 2018
01	MA5166	Statistical Techniques for Biotechnology	4	B+	7	NOV 2019
01	BY5003	Metabolic Process and Engineering (For Biotechnology Stream)	3	A	8	DEC 2018
01	BY5006	Analytical Techniques in Biotechnology	3	B	6	DEC 2018
01	BY5009	Environmental Biotechnology	3	B+	7	DEC 2018
01	BY5111	Preparative and Analytical Techniques in Biotechnology	3	A+	9	DEC 2018
02	BY5201	Bio Separation Technology	3	B+	7	APR 2019
02	BY5202	Bioprocess Engineering	4	B+	7	NOV 2019
02	BY5203	Bioreactor Design and Analysis	4	B	6	APR 2019
02	BY5204	Immunotechnology	3	B+	7	APR 2019
02	BY5205	Advanced Genomics and Proteomics	3	B+	7	APR 2019
02	BY5016	Advances in Molecular Pathogenesis	3	A	8	APR 2019
02	BY5019	Biopharmaceuticals and Biosimilars	3	A	8	APR 2019
02	BY5211	Immunotechnology Laboratory	3	O	10	APR 2019
03	BY5311	Advanced Genetic Engineering Laboratory	3	O	10	NOV 2019
03	BY5312	Bioprocess and Downstream Processing Laboratory	3	A+	9	NOV 2019
03	BY5313	Project Work (Phase I)	6	O	10	NOV 2019
04	BY5411	Project Work (Phase II)	12	O	10	APR 2020

*** End of Statement ***

Cumulative Grade Point Average : 8.15

Classification : FIRST CLASS



Medium of Instruction : ENGLISH

Chennai - 600 025

Date : 02/11/2020

SIGNATURE OF THE STUDENT



CONTROLLER OF EXAMINATIONS



KALASALINGAM

UNIVERSITY

(Kalasalingam Academy of Research & Education)

(Under Section 3, Act 1956 of 1956)

Anand Nagar, Krishnankoil - 626 126 Tamil Nadu, INDIA

CONSOLIDATED GRADE CARD

Sl. No : 999002642



Name of the Student : KARTHICK A

Register No : 9914001018

Branch : B.Tech-Biotechnology

Batch : 2014-2018

SEM	COURSE CODE	NAME OF THE COURSE	ATT. CODE	CREDITS	GRADE	MONTH & YEAR OF PASSING
1	CH106	Chemistry	H	3	B	Nov/Dec 2014
1	CH107	Basic Civil and Mechanical Engineering	H	4	B	Nov/Dec 2014
1	HS101	English for Technical Communication I	H	2	C	Nov/Dec 2014
1	MAT103	Mathematics I	H	3	C	Nov/Dec 2014
1	MAT103	Engineering Drawing	H	3	C	Nov/Dec 2014
1	PHY131	Physics I	H	3	B	Nov/Dec 2014
1	PHY131	Workshop	H	1	B	Nov/Dec 2014
1	PHY183	Physics Laboratory	H	1	5	Nov/Dec 2014
2	BIT183	Cell Biology and Genetics	B	3	A	Apr/May 2015
2	CHY102	Environmental Sciences	B	2	B	Apr/May 2015
2	CSE102	Programming Languages	B	2	B	Apr/May 2015
2	EEE101	Basic Electrical and Electronics Engineering	H	4	D	Apr/May 2015
2	HS208	Soft Skills - I	H	1	C	Apr/May 2015
2	HS103	English for Technical Communication II	B	2	B	Apr/May 2015
2	MAT104	Mathematics II	B	3	C	Apr/May 2015
2	PHY132	Physics II	B	3	B	Apr/May 2015
2	CHY182	Chemistry Laboratory	B	1	C	Apr/May 2015
2	CSE181	Programming Languages Laboratory	B	1	C	Apr/May 2015
3	BIT204	Microbiology	B	3	C	Nov/Dec 2015
3	BIT209	Molecular Biology	H	3	D	Nov/Dec 2015
3	BIT211	Principles of Biochemistry	H	3	D	Apr/May 2016
3	BIT214	Analytical Techniques in Biotechnology	H	3	D	Nov/Dec 2015
3	CH2253	Refrigerant Calculations	B	4	D	Nov/Dec 2015
3	HS203	Soft Skills - II	H	1	D	Nov/Dec 2015
3	MAT202	Mathematics III	B	3	D	Nov/Dec 2015
3	BIT281	Biotechnology Laboratory	H	2	C	Nov/Dec 2015
3	BIT283	Microbiology Laboratory	H	2	C	Nov/Dec 2015
3	BIT286	Cell and Molecular Biology Laboratory	H	2	C	Nov/Dec 2015
4	BIT203	Bioreactors and Biostatistics	H	4	E	Apr/May 2016
4	BIT205	Industrial Biotechnology	H	3	C	Apr/May 2016
4	BIT215	Bioinformatics and Computational Biology	B	4	D	Apr/May 2016
4	BIT216	Protein Science and Engineering	B	3	D	Apr/May 2016
4	CH2252	Unit Operations	B	4	D	Apr/May 2016
4	HS2006	Professional Ethics	B	1	C	Apr/May 2016
4	HS2008	Soft Skills - III	B	1	B	Apr/May 2016
4	BIT288	Computational Biology Laboratory	H	2	A	Apr/May 2016
4	CH2251	Chemical Engineering Laboratory	B	2	C	Apr/May 2016
5	BIT303	Bioprocess Principles	B	4	D	Nov/Dec 2016
5	BIT304	Genetic Engineering	H	4	C	Nov/Dec 2016
5	BIT306	Food Processing and Technology	H	3	D	Nov/Dec 2016
5	BIT322	Enzyme Technology	B	4	C	Nov/Dec 2016
5	CH234	Mass Transfer	B	3	D	Nov/Dec 2016
5	CH237	Reaction Engineering for Biotechnologists	H	3	C	Nov/Dec 2016
5	BIT387	Bioprocess Laboratory	H	2	A	Nov/Dec 2016
5	BIT388	Genetic Engineering Laboratory	H	2	A	Nov/Dec 2016
SEM	COURSE CODE	NAME OF THE COURSE	ATT. CODE	CREDITS	GRADE	MONTH & YEAR OF PASSING
5	BIT398	Community Service Project Phase I	H	1	A	Nov/Dec 2016
6	BIT305	Biochemical Engineering	B	4	D	Apr/May 2017
6	BIT306	Immunology	B	4	E	Apr/May 2017
6	BIT409	Cancer Biology	B	3	C	Apr/May 2017
6	CH416	Industrial Waste Water Management	H	3	C	Apr/May 2017
6	EE313	Energy Management and Energy Audit	H	3	C	Apr/May 2017
6	HS2002	Engineering Management	B	3	D	Apr/May 2017
6	BIT389	Immunology Laboratory	B	2	A	Apr/May 2017
6	BIT390	Biochemical Engineering Laboratory	B	2	B	Apr/May 2017
6	BIT399	Community Service Project Phase II	B	2	B	Apr/May 2017
7	BIT401	Animal Biotechnology	B	4	D	Nov/Dec 2017
7	BIT402	Plant Biotechnology	H	3	C	Nov/Dec 2017
7	BIT403	Downstream Processing	H	4	C	Nov/Dec 2017
7	BIT419	Molecular Diagnostics and Therapeutics	H	3	C	Nov/Dec 2017
7	BIT424	Clinical Trials and Management	B	3	C	Nov/Dec 2017
7	EC443	Wireless Sensor Networks	H	3	C	Nov/Dec 2017
7	HS2001	Total Quality Management	B	3	C	Nov/Dec 2017
7	BIT461	Downstream Processing Laboratory	B	2	B	Nov/Dec 2017
8	BIT406	IPR in Biotechnology	H	3	D	Apr/May 2018
8	BIT409	Project Work	H	10	B	Apr/May 2018
6	NCG1004	National Service Scheme		3	Pass	
6	NCG1008	Extra-Curricular Activities		3	Pass	
6	NCG2001	Industrial Training - I		3	Pass	
7	NCG3004	Co-curricular Activities		3	Pass	
7	NCG2005	International Languages		3	Pass	
6	NCG3002	International Proficiency Exam-1		3	Pass	
Category wise total credits earned						
16. C2 Basic Sciences						
17. C4 Professional Major						
6. C6 Free Elective						
22						
116						
6						
Please see website for details						
CGPA CREDITS						
TOTAL TO BE EARNED		CGPA	CLASS AWARDED		NON-CGPA CREDITS	
EARNED		183	183		TOTAL TO BE EARNED	
			6.98		EARNED	
			First Class		18	
					18	

Please see website for details



Place : Krishnankoil

Date : 08/06/2018

M. Rajan

Controller of Examinations



KALASALINGAM UNIVERSITY

(Kalasalingam Academy of Advanced Education)
(Under Section 3 of the Indian Universities Act, 1907)

Anand Nagar, Krishnankoil - 606 004

CONSOLIDATED

Name of the Student : **KARTHICK A**

Register No **9914001018**

SEM.	COURSE CODE	NAME OF THE COURSE	ATT. CODE	CREDITS	GRADE	MONTH & YEAR OF PASSING
CGPA COURSES						
1	CHY106	C2 Chemistry	H	3	B	Nov/Dec 2014
1	CIV101	C3 Basic Civil and Mechanical Engineering	H	4	B	Nov/Dec 2014
1	HSS101	C1 English for Technical Communication I	9	2	C	Nov/Dec 2014
1	MAT103	C2 Mathematics I	9	3	C	Nov/Dec 2014
1	MEC101	C3 Engineering Drawing	8	2	C	Nov/Dec 2014
1	PHY131	C2 Physics I	9	3	B	Nov/Dec 2014
1	MEC181	C3 Workshop	H	1	B	Nov/Dec 2014
1	PHY183	C2 Physics Laboratory	H	1	S	Nov/Dec 2014
2	BIT103	C3 Cell Biology and Genetics	9	3	A	Apr/May 2015
2	CHY102	C2 Environmental Sciences	9	2	B	Apr/May 2015
2	CSE102	C3 Programming Languages	9	2	B	Apr/May 2015
2	EEE101	C3 Basic Electrical and Electronics Engineering	H	4	D	Apr/May 2015
2	HSS036	C1 Soft Skills - I	H	1	C	Apr/May 2015
2	HSS102	C1 English for Technical Communication II	9	2	B	Apr/May 2015
2	MAT104	C2 Mathematics II	8	3	C	Apr/May 2015
2	PHY132	C2 Physics II	9	3	B	Apr/May 2015
2	CHY182	C2 Chemistry Laboratory	8	1	C	Apr/May 2015
2	CSE181	C3 Programming Languages Laboratory	9	1	C	Apr/May 2015
3	BIT204	C4 Microbiology	9	3	C	Nov/Dec 2015
3	BIT209	C4 Molecular Biology	H	3	D	Nov/Dec 2015
3	BIT211	C4 Principles of Biochemistry	H	3	C	Apr/May 2016
3	BIT214	C4 Analytical Techniques in Biotechnology	H	3	D	Nov/Dec 2015
3	CHE253	C4 Bioprocess Calculations	9	4	D	Nov/Dec 2015
3	HSS037	C1 Soft Skills - II	H	1	C	Nov/Dec 2015
3	MAT202	C2 Mathematics III	9	3	D	Nov/Dec 2015
3	BIT281	C4 Biochemistry Laboratory	H	2	C	Nov/Dec 2015
3	BIT283	C4 Microbiology Laboratory	H	2	C	Nov/Dec 2015
3	BIT286	C4 Cell and Molecular Biology Laboratory	H	2	C	Nov/Dec 2015
4	BIT203	C4 Bioenergetics and Metabolism	H	4	E	Apr/May 2016
4	BIT205	C4 Industrial Biotechnology	H	3	C	Apr/May 2016
4	BIT215	C4 Bioinformatics and Computational Biology	8	4	D	Apr/May 2016
4	BIT216	C4 Protein Science and Engineering	9	3	D	Apr/May 2016
4	CHE252	C4 Unit Operations	9	4	D	Apr/May 2016
4	HSS006	C1 Professional Ethics	9	3	C	Apr/May 2016
4	HSS038	C1 Soft Skills - III	8	1	B	Apr/May 2016
4	BIT288	C4 Computational Biology Laboratory	H	2	A	Apr/May 2016
4	CHE291	C4 Chemical Engineering Laboratory	9	2	C	Apr/May 2016
5	BIT303	C4 Bioprocess Principles	9	4	D	Nov/Dec 2016
5	BIT304	C4 Genetic Engineering	H	4	C	Nov/Dec 2016
5	BIT309	C4 Food Processing and Technology	H	3	D	Nov/Dec 2016
5	BIT322	C4 Enzyme Technology	9	4	C	Nov/Dec 2016
5	CHE354	C5 Mass Transfer	9	3	D	Nov/Dec 2016
5	CHE357	C4 Reaction Engineering for Biotechnologists	H	3	C	Nov/Dec 2016
5	BIT387	C4 Bioprocess Laboratory	H	2	A	Nov/Dec 2016
5	BIT388	C4 Genetic Engineering Laboratory	H	2	A	Nov/Dec 2016



Branch : B.Tech-Biotechnology

Batch : 2014-2018

SEM.	COURSE CODE	NAME OF THE COURSE	ATT. CODE	CREDITS	GRADE	MONTH & YEAR OF PASSING
5	BIT398	C4 Community Service Project Phase I	H	1	A	Nov/Dec 2016
6	BIT305	C4 Biochemical Engineering	8	4	D	Apr/May 2017
6	BIT306	C4 Immunology	8	4	E	Apr/May 2017
6	BIT409	C4 Cancer Biology	8	3	C	Apr/May 2017
6	CIV416	C5 Industrial Waste Water Management	H	3	C	Apr/May 2017
6	EEE313	C6 Energy Management and Energy Audit	9	3	C	Apr/May 2017
6	HSS002	C1 Engineering Management	9	3	D	Apr/May 2017
6	BIT389	C4 Immunology Laboratory	9	2	A	Apr/May 2017
6	BIT390	C4 Biochemical Engineering Laboratory	8	2	B	Apr/May 2017
6	BIT399	C4 Community Service Project-Phase II	9	2	B	Apr/May 2017
7	BIT401	C4 Animal Biotechnology	9	4	D	Nov/Dec 2017
7	BIT402	C4 Plant Biotechnology	H	3	C	Nov/Dec 2017
7	BIT403	C4 Downstream Processing	H	4	C	Nov/Dec 2017
7	BIT419	C4 Molecular Diagnostics and Therapeutics	H	3	C	Nov/Dec 2017
7	BIT424	C4 Clinical Trials and Management	9	3	C	Nov/Dec 2017
7	ECE443	C6 Wireless Sensor Networks	H	3	C	Nov/Dec 2017
7	HSS001	C1 Total Quality Management	H	3	C	Nov/Dec 2017
7	BIT491	C4 Downstream Processing Laboratory	8	2	B	Nov/Dec 2017
8	BIT406	C4 IPR in Biotechnology	H	3	D	Apr/May 2018
8	BIT499	C4 Project Work	H	10	B	Apr/May 2018
Non-CGPA COURSES						
6	NCG1004	National Service Scheme		3	Pass	
8	NCG1005	Extra-Curricular Activities		3	Pass	
6	NCG2001	Industrial Training - I		3	Pass	
7	NCG2004	Cocurricular Activities		3	Pass	
7	NCG2005	International Languages		3	Pass	
6	NCG3002	International Proficiency Exams-I		3	Pass	
Category wise total credits earned						
C1: Humanities		16	C2: Basic Sciences		22	
C3: Basic Engineering		17	C4: Professional Major		116	
C5: Minor Elective		6	C6: Free Elective		6	

CGPA CREDITS			
EARNED	TOTAL TO BE EARNED	CGPA	CLASS AWARDED
183	183	6.98	First Class

NON-CGPA CREDITS	
EARNED	TOTAL TO BE EARNED
18	18

Place : Krishnankoil
Date : 08/06/2018



Please see overleaf for details



M. Prakash
Controller of Examinations



(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)

S.P.G.Chidambara Nadar - C. Nagammal Campus

S.P.G.C.Nagar, K. Vellakulam - 625 701, (Near Virudhunagar), Madurai District

TRANSFER CERTIFICATE

Sl. No.753/TC/2019-2020

Roll No. : 18PBTE04

Reg. No. : 920418509009

1. Name of the Student : KARTHICK.A
2. Name of the Father / Mother / Guardian : R. ARUMUGAM
3. Nationality, Religion & Caste : INDIAN, HINDU
BC, KAMMALAR
4. Sex : MALE
5. Date of Birth : 09/12/1996
6. Class in which the student was Studying at the time of leaving : FINAL YEAR M.Tech.
BIOTECHNOLOGY
7. Date of Admission : 19.06.2018, 2018-19
8. Whether qualified for promotion to : REFER MARK STATEMENT
a higher class
9. Date on which the student actually left the College : 30.09.2020
10. Date on which application for Transfer Certificate was made : 30.09.2020
11. Conduct & Character : GOOD

Date :



[Signature]

PRINCIPAL

Kamaraj College of
Engineering and Technology
Virudhunagar

आयकर विभाग INCOME TAX DEPARTMENT		भारत सरकार GOVT. OF INDIA
	स्थायी लेखा संख्या कार्ड Permanent Account Number Card CTOPA1180L	
नाम / Name KARTHICK A		
पिता का नाम / Father's Name ARUMUGAM		
जन्म की तारीख / Date of Birth 09/12/1996	 हस्ताक्षर / Signature	

In case this card is lost / found, kindly inform / return to :
Income Tax PAN Services Unit, UTIITSL
Plot No. 3, Sector 11, CBD Belapur,
Navi Mumbai - 400 614.

इस कार्ड के खोने/पाने पर कृपया सूचित करें/लीटाएं :
आयकर पैन सेवा यूनिट, UTIITSL
प्लॉट नं: ३, सेक्टर ११, सी.बी.डी.बेलापुर,
नवी मुंबई-४०० ६१४.

A. Karthick

 **UNION OF INDIA Driving Licence (Tamil Nadu)** 

DL. No. **TN58 20150003559** (NT)

 Date of Issue **22-04-2015** Valid Till **21-04-2035** 

Date of Birth **09-12-1996** Blood Group **O+**

Name **KARTHICK A**

Son/Daughter/Wife of **ARUMUGAM R** 

TND03930258 **TN58 20150003559**

 LMV
01-12-2020

 MCWG
22-04-2015

Badge Date

Badge No.

Address

13 A CHOKKALINGA NAGAR 7 TH STREET

Madurai South, Madurai, TN 625016

Holder's Signature  Signature of Issuing Authority 

TN58 MADURAI SOUTH RTO

Form 7 Rule 16(2)

A. Karthick

B3/15425/2861/08

GCP-26-1-8,50,000 Cps.-13-9-2007 [P4-13]

R.Dis...../200

Dated.....200

BC

சான்றிதழ் எண் :
Certificate No. :



மாவட்டக் குறியீடு எண் :
District Code :

14

வட்டக் குறியீடு எண் :
Taluk Code :

01

கிராமக் குறியீடு எண் :
Village Code :

057

7889454

வகுப்புச் சான்றிதழ்
COMMUNITY CERTIFICATE

மதுரை மாவட்டம், மதுரை தென் வட்டம்
மேலிமதுரை, திருமதி/செல்வன்/செல்வி
A. கார்த்திக் தகப்பனார்/கணவர் பெயர்
R. சூரபகம் /கிந்தி/ கிராமம் வகுப்பைச் சார்ந்தவர்.
அரசு ஆணை நிலை எண் 28, பிற்பட்ட மற்றும் மிகவும் பிற்பட்ட பிரிவின்
நலத் துறை, நாள் 19-7-1994 வரிசை எண் 47, படி பிற்பட்ட பிரிவினைச்
சார்ந்தவர் எனச் சான்றளிக்கப்படுகிறது.

This is to certify that Son / Daughter of
Thiru of
Village / Town Taluk
District of the State of Tamil Nadu belongs to
Community, which is recognised as a
Backward Class as per Government Order (Ms.) No. 28, Backward Classes
and Most Backward Classes Welfare, dated 19th July 1994
vide Serial No.

2. திரு / திருமதி / செல்வன் / செல்வி A. கார்த்திக்
என்பவரும் அவருடைய குடும்பத்தினரும் தமிழ்நாட்டில்
மாவட்டத்தில் மதுரை தென் வட்டத்தில் கிராமத்தை, மதுரை
கிராமத்தில் / நகரத்தில் வசித்து வருகிறார்கள் எனச் சான்றளிக்கப்படுகிறது.

2. It is certified that Thiru/Tmt./Selvan/Selvi and
his/her family ordinarily reside(s) at Village/Town
District of
Tamil Nadu.

முத்திரை
Seal.



கையொப்பம் :
Signature :

நாள் :
Date :

பதவி :
Designation :

Head Quarters Deputy Tahsildar

Madurai South Taluk

7-7-08